



Section 5.11

Water Supply



SECTION 5.11

WATER SUPPLY

This section analyzes projected impacts to water supplies and distribution systems that may result from the implementation of the proposed General Plan Update. The purpose of this analysis is to document and describe the existing water supply, water consumption, and distribution infrastructure in the City of Buena Park, and to evaluate impacts associated with buildout of the proposed General Plan Update. Mitigation measures to reduce the significance of impacts are recommended, as necessary.

5.11.1 EXISTING SETTING

WATER SUPPLY AND DISTRIBUTION SYSTEM

The City relies on two major water supply sources, which include imported water from the Metropolitan Water District (MWD) and local groundwater from the Orange County Groundwater Basin, managed by the Orange County Water District (OCWD). The City of Buena Park maintains an agreement with the Municipal Water District of Orange County (MWDOC) to receive imported water supplies from MWD. Water supplies imported into the City come from the Colorado River and the East Branch of the State Water Project.

Water System

The City's water service area is within the northwest portion of Orange County, and encompasses the entire City, excluding three small areas that are served by the City of Fullerton or the Suburban Water Systems. Additionally, the City provides water service to areas outside of the City limits, which includes portions of the City of Anaheim and the City of La Mirada. The City does not have emergency interconnections with surrounding cities.

The City's Public Works Department Water Division manages the local potable water distribution system in the City. The City's water distribution system conveys water to its customers through approximately 220 miles of underground pipelines and 19,600 service connections. Distribution pipelines are generally six to 12 inches in diameter. Pipelines larger than 12 inches are considered transmission mains. The City's water system includes the following infrastructure:

- One storage reservoir, which is capable of holding 21.5 million gallons (MG) of water;
- Eight active groundwater wells, which have a combined production capacity of approximately 16,800 gpm;
- One inactive ground water well;
- One destroyed groundwater well;
- One booster pumping station;
- 13 pressure regulating stations; and
- Four active import water connections with the MWD (currently only two of these connections are used).

The City's water service area varies in elevations from 42 feet above mean sea level (msl) in the southern portion of the City to 250 feet msl in the northeastern corner of the City. The distribution system has been divided into three primary pressure zones, one of which includes three subzones (Zones 1, 2, 3a, 3b, and 3c) in order to provide adequate water pressure throughout the City; refer to Exhibit 5.11-1, Buena Park Water System. A booster pumping station delivers water from a lower pressure zone into a higher pressure zone. The City's booster pumping station is used to supply water from the Zone 1 reservoir to Pressure Zone 2 and is only used when the MWD OC-25 connection is unavailable. The City also maintains pressure regulating stations to ensure the transfer of water from high pressure zones to lower pressure zones without exceeding the allowable pressures.

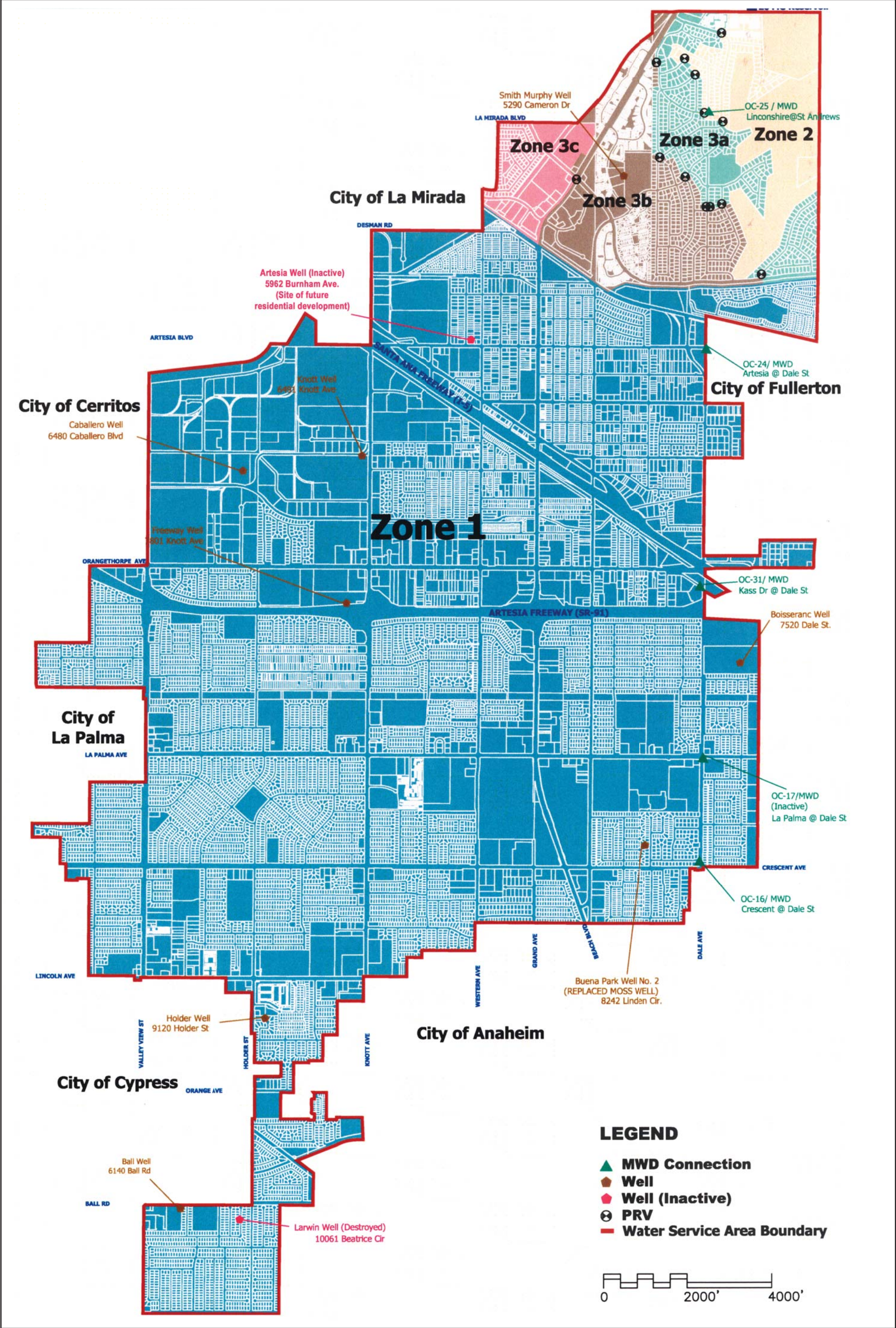
Groundwater wells in the City include the Ball Well, Boisseranc Well, Linden Well, Caballero Well, Freeway Well, Holder Well, Knott Well, and Smith Murphy Well. Linden Well is the newest well constructed in Buena Park and was completed in 2008.

The City's imported water connection, OC-25, is the City's main source for imported MWD water and feeds Zone 2 in the City's water distribution system. Zone 2 has the highest water pressure in the City. This connection is typically used year round. The City's other MWD connections (OC-16, OC-24, and OC-31) are not used year-round, but are used periodically when needed to supplement groundwater supplies. Although MWD connections OC-16 and OC-24 have been used infrequently, OC-31 has not been utilized for several years. Nonetheless, the City maintains all the MWD connections.

Currently, the City's water system capacity is approximately 36,450 gallons per minute (gpm); refer to Table 5.11-1, Buena Park Water System Capacity. The water system capacity includes the operation of all eight groundwater wells and the four MWD connections to their maximum capacity.

**Table 5.11-1
Buena Park Water System Capacity**

Water Source	Capacity (gpm)
Groundwater Well	
Ball	1,500
Boisseranc	3,000
Linden Well	3,000
Caballero	2,000
Freeway	1,500
Holder	1,800
Knott	2,000
Smith Murphy	2,000
Total Groundwater Capacity	16,800
Imported Water - MWD Connections	
OC-16	6,700
OC-24	1,800
OC-25	6,700
OC-31	4,450
Total Imported Water	19,650
TOTAL	36,450
gpm = gallons per minute.	
Source: City of Buena Park 2005 Water Master Plan Study Final Report, prepared by Carollo Engineers, February 2007.	



Source: 2005 Water Master Plan Study, Carollo Engineers, February 2007.

This page intentionally left blank.

Existing Water Supply and Demand

From 2000 to 2004, the City's water demand ranged from 19,185 acre feet per year (AFY) to 17,726 AFY. Historically, the City has maintained an annual water consumption of approximately 16.0 million gallons per day (mgd), which has remained relatively the same between 2000 and 2004. Between the years 2000 and 2005, the City produced approximately 70 percent of its water supply from groundwater and purchased the remaining 30 percent from imported connections.

According to the *City of Buena Park 2005 Water Master Plan Study Final Report (Water Master Plan)*, the City's current annual water demand is 18,251 AFY. Currently, the City's water average daily demand (ADD) is approximately 11,334 gallons per minute (gpm) or 16.3 mgd. The City's maximum daily demand (MDD) is 17,908 gpm and peak hour demand (PHD) is 27,542 gpm.

Each year OCWD sets a basin production percentage (BPP) for the agencies that pump from the basin. The BPP is the ratio of water produced from the groundwater to all water produced by the agency. The BPP provides a limit on how much each agency can pump from the Orange County Groundwater Basin without paying a penalty. According to the *City of Buena Park 2005 Water Master Plan Study Final Report (Water Master Plan)* (February 2007), the City's basin pumping percentage is 66 percent and is anticipated to increase to the historical value of 75 percent. However, water supply conditions have changed over recent years and according to the City's Public Works Department, the current BPP is 62 percent and the BPP is not anticipated to rise above the current rate for a number of years. Further, it is not anticipated to reach the historical value of 75 percent in the next 10 years.¹

Water Reliability

The City's ability to meet its MDD could be compromised if there is loss of one or more water supply sources. The City's groundwater wells are dependent on electricity to operate. Four of the eight wells have a permanent on-site generator. Back-up or alternative energy sources (i.e., on-site emergency generators) are available at three of the wells and help to improve the reliability of groundwater wells and booster stations. One of the wells within Buena Park does not have back up energy systems; therefore these facilities may not be as reliable as the MWD connections. However, the geographic distribution of the City's multiple wells adds to the reliability of the City's water system because it is unlikely that there would be a failure in all wells simultaneously. Since the MWD connections are all connected to the same feeder pipeline, it is possible for the City to lose its entire MWD supply if this feeder pipeline goes out-of-service. The City's reservoir could help with short-term loss of water supply.

Fire Flows

The volume of water storage required for firefighting is a function of the instantaneous flow rate required to fight a fire, the duration of the fire flow, and the number of fire flows that occur before the volume can be replenished. The water system should be capable of providing fire flow during the day with the highest MDD. Existing fire flows within the City range from 0.18 million gallons (MG) to 1.2 MG. As of 2005, the following seven areas in the City have been identified to have insufficient fire flow:

¹ Written correspondence: Nabil S. Henein, Deputy City Engineer, City of Buena Park, March 22, 2010.

- Between Whitaker Street and Commonwealth Avenue, east of Dale Street;
- Somerset Street and Rockledge Drive;
- Auto Center Drive and Dale Street;
- North of Orangethorpe Avenue between Indiana Avenue and Oregon Street;
- West of Knott Avenue at 8th Street;
- Southwest corner of Orangethorpe Avenue and Western Avenue; and
- Northwest of Knott Avenue and Mt. Waterman Drive.

Fire flow improvements within these deficient areas have been identified within the City's capital improvements program and have been categorized as high priority improvements. High priority improvements are scheduled for implementation between 2006 and 2015.²

Emergency Water Storage

Emergency storage is a dedicated storage source of water that can be used as a backup supply in the event a major supply is interrupted. According to the City's *2005 Water Master Plan*, the City's existing water storage capacity is sufficient to meet established criteria for operational, fire, and emergency storage. Therefore, the plan does not recommend storage improvements for the City's water system.

Capital Improvements

High priority improvements include life/safety issues, such as fire flows, and have been scheduled for implementation between 2006 and 2015. Medium-priority improvements include facilities needed to fix low-pressure problems, improve the City's ability to use groundwater, and provide operational flexibility and improve emergency response capability, and have been scheduled for implementation between 2015 and 2020. The *2005 Water Master Plan* recommends improvements for operational facilities and fire flows.

Several operational improvements have been recommended to increase the system's reliability and efficiency, and reduce the cost of delivering water. Over 40 percent of the City's existing water pipelines are older than 50 years old. The City's *Water Master Plan* indicates there is a need for a comprehensive pipeline replacement program. The *Water Master Plan* indicates seven groups of projects are needed to improve the ability of the City's water system to provide adequate fire flows, which is considered to be a high priority.

WATER RECYCLING AND GROUNDWATER REPLENISHMENT

Recycled water can be used to reduce the demand for potable water by supplying water for irrigation and other non-potable water uses. The City does not currently have a recycled water system in place due to economic constraints.

The Orange County Sanitation District (OCSD) reclaims up to 10 mgd of treated wastewater. The reclaimed water is sent to OCWD for further processing and then used to supply recycled water for landscape irrigation and for injection into the groundwater seawater intrusion barrier.

² City of Buena Park 2005 Water Master Plan Study Final Report, prepared by Carollo Engineers, February 2007.

In April 2001, the OCSD and OCWD approved a plan to construct a Ground Water Replenishment System (GWR System). Construction on the project began in 2004 and operations began in January 2008. The GWR System takes highly treated sewer water from the Orange County Sanitation District and purifies it to levels that meet State and Federal drinking water standards using microfiltration, reverse osmosis, ultraviolet light and hydrogen peroxide. This system releases about half of the purified water into the Orange County Groundwater Basin and sends the other half of the water to OCWD by percolation into groundwater spreading basins in Anaheim.

WATER QUALITY

Overall, groundwater wells in the City provide potable water that does not require treatment. For select local wells, the City adds disinfectant to the groundwater prior to discharging it into the distribution system.

The OCWD is the agency that manages the Orange County Groundwater Basin. OCWD maintains a thorough groundwater protection policy that includes water quality monitoring, cleanup of contaminants, regulatory agency support, toxic residuals removal and hazardous waste management. OCWD conducts water quality testing at more than 1,400 locations throughout the basin.

REGULATIONS

Fire Flow Requirements

The Orange County Fire Authority (OCFA) is responsible for establishing fire flow requirements for the City of Buena Park water service area. Refer to Table 5.11-2, *Fire Flow Requirements*, for the established fire flow requirements in Buena Park.

**Table 5.11-2
Fire Flow Requirements**

Land Use	Minimum Flow Required (gpm)	Minimum Pressure (psi)	Duration (hours)
Single-Family Residential	1,500	20	2
Multi-Family Residential	2,500	20	2
Public Facility	3,500	20	3
Commercial	3,500	20	3
Industrial	5,000	20	4
Hospital	5,000	20	4
gpm = gallons per minute; psi = pounds per square inch.			
Source: <i>City of Buena Park 2005 Water Master Plan Final Report</i> , prepared by Carollo Engineers, February 2007.			

5.11.2 REGULATORY FRAMEWORK

URBAN WATER MANAGEMENT PLAN ACT

The Urban Water Management Plan Act (Act) was passed in 1983 and codified as California Water Code Sections 10610 through 10657. Since its passage in 1983, the Act has been amended on several occasions. In 2004, the Act was amended to require additional discussion of transfer and exchange opportunities, non-implemented demand management measures, and planned water supply projects. Most recently, in 2005, the Act was amended to require water use projections (required by California Water Code Section 10631) to include projected water use for single-family and multi-family residential housing needed for lower income households. In addition, Government Code Section 65589.7 was amended to require local governments to provide a copy of the adopted housing element to water and sewer providers. The Act requires “every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to prepare and adopt, in accordance with prescribed requirements, an urban water management plan.” Urban water suppliers must file these plans with the California Department of Water Resources every five years describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities. As required by the Memorandum of Understanding Regarding Urban Water Conservation in California and Assembly Bill 11X (1991), the 2005 UWMP Act, incorporated water conservation initiatives, and a Water Shortage Contingency Plan.

FEDERAL SAFE DRINKING WATER ACT OF 1974 (SDWA)

SDWA authorizes the United States Environmental Protection Agency (US EPA) to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. U.S. EPA, states, and water systems then work together to make sure that these standards are met. Originally, SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach ensures the quality of drinking water by protecting it from source to tap. SDWA applies to every public water system in the United States. There are currently more than 160,000 public water systems providing water to almost all Americans at some time in their lives.

SENATE BILLS 221 AND 610

Senate Bills 221 and 610 were signed into law in 2001 and took effect January 1, 2002. The two bills amended State law to better link information on water supply availability to certain land use decisions by cities and counties. The two companion bills provide a regulatory forum that requires more collaborative planning between local water suppliers and cities and counties. All Senate Bill (SB) 221 and 610 reports are generated and adopted by the public water supplier.

SB 610 requires a detailed report regarding water supply and planning for additional water supplies that is included with the environmental document for specified projects. All projects that meet any of the following criteria require the water supply assessment:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 SF of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 SF of floor space;
- A proposed hotel and/or motel having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant or an industrial park planned to house more than 1,000 persons, occupying more than 60 acres of land, or having more than 650,000 SF of floor area;
- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project.

While SB 610 primarily affects the Water Code, SB 221 principally applies to the Subdivision Map Act. The primary effect of SB 221 is to condition every tentative map for an applicable subdivision to verify that the public water supplier (PWS) has sufficient water supply available to serve it. Under SB 221, approval by a city or county of certain residential subdivisions requires a written verification of sufficient water supply. SB 221 applies to any subdivision, defined as:

- A proposed residential development of more than 500 dwelling units (if the PWS has more than 5,000 service connections); or
- Any proposed development that increases connections by 10 percent or more (if the PWS has fewer than 5,000 connections).

2005 METROPOLITAN WATER DISTRICT OF ORANGE COUNTY URBAN WATER MANAGEMENT PLAN

The Municipal Water District of Orange County (MWDOC) provides wholesale imported water from the Metropolitan Water District of Southern California (Metropolitan) to 30 Orange County cities and water agencies providing retail water service, including Buena Park. MWDOC also coordinates and sponsors regional water conservation programs in cooperation with its local retail agencies, and engages in regional water resource and reliability planning in cooperation with other local and regional water, wastewater, and groundwater management agencies.

The MWDOC 2005 UWMP, adopted December 21, 2005, was prepared consistent with the Urban Water Management Planning Act. The MWDOC 2005 UWMP total service area water demand will be 611,757 acre-feet in 2030. Current and planned water supplies for the MWDOC service area are projected to be 616,558 acre-feet in 2030.

BUENA PARK MUNICIPAL CODE

City of Buena Park Water Conservation and Water Supply Shortage Program

The Buena Park City Council adopted Ordinance No. 1533, which revised Chapter 13.28, Water Conservation and Water Supply Shortage Program, of the Municipal Code. The purpose of the ordinance is to establish a water conservation and supply shortage program that will reduce water consumption within the City through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City to avoid and minimize the effect and hardship of water shortage to the greatest extent possible.

Section 13.28.060 of the City's Municipal Code identifies the following permanent water conservation requirements effective at all times:

- Limits on Watering Hours;
- Limit on Water Duration;
- No Excessive Water Flow or Runoff;
- No Washing Down Hard or Paved Surfaces;
- Obligation to Fix Leaks, Breaks, or Malfunctions;
- Re-circulating Water Required for Water Fountains and Decorative Water Features;
- Limits on Washing Vehicles;
- Drinking Water Served Upon Request Only;
- Commercial Lodging Establishments Must Provide Option to Not Launder Linen Daily;
- No Installation of Single Pass Cooling Systems;
- No Installation of Non-circulating in Commercial Car Wash and Laundry Systems;
- Restaurants Required to Use Water Conserving Dish Wash Spray Valves; and
- Commercial Car Wash Systems.

Section 13.28.060 to 13.28.100 of the City's Municipal Code allows the City to implement a four phase water conservation program that progressively restricts water usage. Phase 1 of the water conservation phasing is the least restrictive. Phase 4 is the most restrictive phase of the water conservation plan and includes requirements of all previous phases listed and additional provisions, as discussed below.

A Phase 1 Water Supply Shortage condition exists when the City notifies its water users that due to drought or other supply reductions, a consumer demand reduction of up to 10 percent is necessary to make more efficient use of water and respond to existing water conditions. This phase limits watering days to three days a week; requires all leaks, breaks, or other malfunctions in the water user's plumbing or distribution system to be repaired within 72 hours of notification by the City; and other prohibited water uses as determined by the City.

A Phase 2 Water Supply Shortage conditions exists when the City notifies its water users that due to drought or other supply restrictions, a consumer demand reduction of up to 20 percent is necessary to make more efficient use of water and respond to existing water conditions. The City will establish a water allocation for property served by the City using a method that does not penalize personal for the implementation of conservation methods. This phase limits watering

days to two days a week; requires all leaks, breaks, or other malfunctions in the water user's plumbing or distribution system to be repaired within 48 hours of notification by the City; and places limits on filling ornamental lakes or ponds, washing vehicles, filling residential swimming pools and spas; and other prohibited water uses as determined by the City.

A Phase 3 Water Supply Shortage Emergency exists when the City declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that up to 30 percent consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation, and fire protection. In this phase, the City may reduce water allocation in all categories to meet the available water supply. In addition to the requirements in Phase 1 and Phase 2, no watering or irrigation is allowed; all leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within 24 hours of notification by the City; and no new potable water services will be provided.

A Phase 4 Water Supply Shortage Emergency exists when the City declares a water shortage emergency condition pursuant to California Water Code 350 and notifies its residents and business that more than 30 percent and up to 50 percent consumer demand reduction is required. In addition to Phases 1 to 3, the City may shut off all non-essential water uses.

Landscaping Limitations

Section 19.432.030, Landscape and Maintenance, of the City's Municipal Code requires that drought-tolerant plants be predominate in landscaping for all uses other than single-family residential. The use of water-thirsty plants is to be used in limited numbers.

According to the City's Public Works Department, requirements for water usage for landscaping associated with new development were established during fall of 2009. Specifically, Landscape Limitations – A Water Efficient Landscape Ordinance (November 24, 2009) and Guidelines (December 8, 2009) were adopted by the City. Municipal Code Chapter 13.30, Water Efficient Landscaping, establishes landscape water use standards and identifies the landscape projects that are subject to the ordinance.

5.11.3 SIGNIFICANCE THRESHOLD CRITERIA

Appendix G of the *CEQA Guidelines* contains the Initial Study Environmental Checklist, which was included with the Notice of Preparation to show the areas being analyzed within the EIR; refer to [Appendix A](#) of this EIR. The Initial Study Environmental Checklist includes questions relating to water supply. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, water supply and distribution systems impacts resulting from the implementation of the proposed General Plan Update may be considered significant if they would result in the following:

- Have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements; and/or
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Based on these standards, the effects of the proposed General Plan Update have been categorized as either a “less than significant impact” or a “potentially significant impact.” Mitigation measures are recommended for a potentially significant impact. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant unavoidable impact.

5.11.4 IMPACTS AND MITIGATION MEASURES

WATER SUPPLY AND DISTRIBUTION

■ BUILDOUT OF THE CITY OF BUENA PARK IN ACCORDANCE WITH THE PROPOSED GENERAL PLAN UPDATE COULD RESULT IN INCREASED DEMAND FOR WATER SUPPLIES AND INFRASTRUCTURE WITHIN THE CITY.

Impact Analysis: Buildout of the proposed General Plan Update would involve an increase in the City’s population, resulting in an overall increase in water demand. As stated, the City relies on two major water supply sources, which include imported water from MWD through an agreement with MWDOC and local groundwater from the Orange County Groundwater Basin, managed by OCWD. According to the City’s Public Works Department, Buena Park receives 62 percent of its water from groundwater and 38 percent of its water from allocations from MWD. The City’s current BPP of 62 percent is not anticipated to rise above the current rate for a number of years. Further, it is not anticipated to reach the historical value of 75 percent in the next 10 years.³

In 2030, the City is projected to have an ADD of 12,845 gpm, MDD of 20,295 gpm, and PHD of 31,213 gpm, based on population growth projections by the Southern California Association of Governments (SCAG). The City is expected to continue utilizing local groundwater sources as the primary source of water supply.

The *Water Master Plan* projects the City will meet its 2030 water demand through use of 15,510 AFY of groundwater and 5,170 AFY of imported water.⁴ The *Water Master Plan* estimates water demand in part on a 2030 population of 92,481 persons. The proposed General Plan Update estimates a population of 88,567 persons in 2035. The population growth assumed under the proposed General Plan Update is less than the population projections used to determine the availability of adequate water supply for the City within the *Water Master Plan*. However, it should be noted that water sources identified as available in the *Water Master Plan*, are not the same water sources that are available currently, or anticipated to be available in the future. As a result of the drought (both actual and regulatory), the groundwater basin is in overdraft. The State is mandating a 20 percent reduction in water use by 2020. Further, Buena Park is currently in a stage 1 water shortage.⁵

The MWDOC 2005 Urban Water Management Plan (December 21, 2005) provides a long-range assessment of water supply for MWDOC’s service area, which includes Buena Park. The study assesses water supply to forecast year 2030 taking into consideration imported, groundwater,

³ Written correspondence: Nabil S. Henein, Deputy City Engineer, City of Buena Park, March 22, 2010.

⁴ *City of Buena Park 2005 Water Master Plan Study Final Report*, prepared by Carollo Engineers, February 2007.

⁵ Written correspondence: Nabil S. Henein, Deputy City Engineer, City of Buena Park, March 22, 2010.

surface, and recycled supplies, as well as wastewater. In addition to water supply, the UWMP addresses efficient use of water, demand management measures, implementation strategies and schedules, and other relevant information and programs.

An UWMP serves as a source document for cities and counties as they prepare their General Plans. UWMPs estimated water demand is based on the projections of demographic and economic variables from regional planning agencies, including SCAG. The 2005 UWMP prepared for the MWDOC indicate there are sufficient water supplies and water shortage contingency plans to protect existing and future regional water needs.

Similar to the City's Water Master Plan, MWDOC's UWMP estimates water demand in part on SCAG 2004 RTP population projections. MWDOC is anticipated to have sufficient existing and planned supplies to meet 100 percent of its projected demand for the next 25 years. As previously stated, the proposed General Plan Update estimates a lower population in 2035 than projected by SCAG. However, similar to groundwater supplies, imported water sources previously identified as available to serve future growth are not currently available and are not anticipated to be available in the future.

The City's Municipal Code (Sections 13.28.060 to 13.28.100) establishes permanent water conservation requirements that are effective at all times, that would reduce water consumption within the City; and if necessary, the City may implement its phased water conservation program to progressively restrict water usage. The City has also established requirements for water usage for landscaping associated with new development that would also reduce water consumption. Additionally, the City has implemented a tiered rate billing system to encourage conservation and increased meter rates to provide stability in a conservation climate, as part of the Buena Park Water Enterprise Business Plan.

The City's *Water Master Plan* includes a Water Supply Plan, which is set to implement and maintain delivery of water to the City's customers despite the status of supply availabilities. Several water supply scenarios were analyzed to determine if the City would be able to meet water demands under various water supply situations. Five scenarios were evaluated, which includes 0 percent groundwater and 100 percent MWD Supply, 25 percent groundwater and 75 percent MWD Supply, 50 percent groundwater and 50 percent MWD Supply, 75 percent groundwater and 25 percent MWD Supply, and 100 percent groundwater and 0 percent MWD Supply. In all scenarios, except with 100 percent groundwater, the City would be able to meet the required demands and design criteria. In the event the entire MWD water supply was unavailable, there would be a shortage of available supply to meet the future (year 2030) projected ADD. The City cannot meet its MDD solely from groundwater sources, unless the City's Phase 4 Conservation Plan, which calls for conservation of 30 to 50 percent, is implemented.

The Emergency Supply Plan contained in the *City's Water Master Plan* focuses on procedures for emergency situations that involve the unplanned loss of one or more supply sources. The plan evaluates water supply reliability for emergency situations, such as loss of water due to an earthquake event, loss of MWD supplies, loss of local ground water supplies, loss of electricity, and loss of supplies to one specific area of the City, which is the area of the City south of Ball Road that is somewhat isolated from other water supply sources. The demand for this area is supplied from two pipelines fed by the upper portions of Zone 1. In some of these situations it was necessary to reduce water demands (i.e., conservation) and/or use emergency storage. Based on the emergency situations analyzed in the *Water Master Plan*, the City's water system can adequately maintain service during most unplanned events that can be reasonably anticipated without the need for a mandatory demand reduction.

Several operational improvements have been recommended to increase the system's reliability and efficiency, and reduce the cost of delivering water. Over 40 percent of the City's existing water pipelines are older than 50 years old. The City's *Water Master Plan* indicates there is a need for a comprehensive pipeline replacement program. The *Water Master Plan* indicates seven groups of projects are needed to improve the ability of the City's water system to provide adequate fire flows, which is considered to be a high priority. These areas have been identified within the City's capital improvements program and have been categorized as high priority. High priority improvements are scheduled for implementation between 2006 and 2015.⁶ Thus, these improvements are planned to occur within the buildout period of the proposed General Plan Update.

The General Plan Update identifies policies and implementation measures within the Community Facilities Element to ensure adequate water supply and facilities to serve the projected growth associated with buildout of the General Plan, including maintaining, improving, and replacing aging water systems to ensure adequate water provision to the community (Policy CF-4.1) and evaluating individual projects to determine adequate service capacity and to require mitigation and/or necessary improvements (Implementation Measure CF-17). The Conservation and Sustainability Element includes policies to reduce water consumption through green building and conservation measures. Implementation of the General Plan Update Draft policies and implementation measures, along with maintenance of the existing water delivery system, would make impacts to the City's water supply less than significant.

Proposed General Plan Update Policies and Implementation Measures:

Policies

- CF-4.1: Continue to maintain, improve, and replace aging water systems to ensure the provision of these services to all areas of the community.
- CF-4.2: Provide for the efficient and economic distribution of adequate water supply and pressure to all residential, commercial, industrial, and public areas served by the Public Works Department.
- CF-4.3: Continue to provide municipal water service that meets or exceeds State and Federal health standards and monitor water quality according to established criteria, with respect to health standards.
- CF-4.4: Provide sufficient capacity to serve existing and planned uses and identify, manage, and monitor, when appropriate, large water users.
- CF-4.5: Ensure that new development or redevelopment water infrastructure systems are adequate to serve the development.
- CF-4.6: Strive to ensure that infrastructure capacities are planned to adequately serve future development.

⁶ City of Buena Park 2005 Water Master Plan Study Final Report, prepared by Carollo Engineers, February 2007.

- CF-4.7: Ensure the City's Water Master Plan is updated as necessary to serve as an effective tool in the adequate provision of water supply to the community.
- CF-4.8: Continue to inspect, maintain, and enhance City facilities relative to their water use.
- CF-4.9: Improve water services in a way that respects the natural environment.
- CF-4.10: Examine the use of alternative water supplies, such as grey water and reclaimed water, where appropriate and feasible.
- CF-4.11: Continue to sponsor and provide water conservation and education programs.
- CF-4.12: Continue to enforce the Permanent, Year Round Water Conservation Measures and Prohibitions against Water Waste established by the Water Conservation and Emergency Water Shortage Supply Ordinance (Policy CS-4.9).
- CF-4.13: Continue to enforce enacted Phases 1-4 established by the City Council under the Water Conservation and Emergency Water Shortage Supply Ordinance (Policy CS-4.10).
- CF-4.14: Continue to enforce the Water Efficient Landscape Ordinance through Planning Department procedures in compliance with AB 1881 (Policy CS-4.11).
- CS-4.8: Design new development and redevelopment projects in a manner that avoids adverse environmental effects to the maximum extent feasible, considering the following environmental factors:
- Natural topography
 - Wildlife habitat and linkages
 - Erosion protection and sedimentation
 - Drainage patterns
 - Groundwater recharge capability
- CS-23.4: Emphasize design for water conservation as part of a project's green building efforts.

Implementation Measures

- CF-16 Update the City's Water Master Plan.
- CF-17 Continue capital improvements indicated in the City's Water Master Plan to improve the ability of the City's water system to provide adequate fire flows and to maintain optimum operation standards.
- CF-18 Implement a development monitoring system to evaluate the individual and cumulative impact of proposed development on the service capacity of water facilities. Use this system in the review of development projects and to require mitigation and/or necessary improvements.

- | | |
|-------|---|
| CF-19 | Utilize, where appropriate, public financing mechanisms, such as special assessment or community facilities districts to fund water improvement and service costs. |
| CF-20 | Review and revise planning and building codes to provide for new technologies that will improve water service delivery and allow for the incorporation of alternative water sources. |
| CF-21 | Continue to implement the City's Water Conservation and Water Supply Shortage Program to reduce water consumption within the City through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City. |
| CF-22 | Explore the feasibility of a recycled water system within the City to reduce the demand for potable water in the future by supplying water for irrigation and other non-potable water uses. |
| CF-23 | Continue to implement the Landscaping Limitations in Municipal Code which requires that drought-tolerant plants be used predominantly in landscaping for all uses other than single family residential. |
| CS-52 | Review and determine appropriate incentives regarding the installation of water efficient or energy efficient fixtures. |

Mitigation Measures: No further mitigation is required beyond compliance with the General Plan Update Policies and Implementation Measures.

Level of Significance: Less Than Significant Impact.

5.11.5 CUMULATIVE IMPACTS

- BUILDOUT OF THE CITY OF BUENA PARK IN ACCORDANCE WITH THE PROPOSED GENERAL PLAN UPDATE COULD RESULT IN CUMULATIVE IMPACTS TO WATER RESOURCES INCLUDING INCREASED DEMAND FOR WATER SUPPLIES AND INFRASTRUCTURE WITHIN THE CITY.

Impact Analysis: Cumulative water impacts are analyzed in terms of impacts to water supplies and facilities operated by the City's Public Works Department Water Division, along with impacts to the MWDOC.

The City relies on two major water supply sources, which include imported water from the MWD through MWDOC and local groundwater from the Orange County Groundwater Basin, managed by the OCWD. The groundwater basin receives water via the Santa Ana River.

MWDOC serves 30 Orange County cities and water agencies providing retail water service. The implementation of the City of Buena Park General Plan Update, along with other regional projects has the potential to result in a cumulative impact on water supplies and conveyance systems. Current and planned water supplies for the MWDOC service area are projected to be

616,558 acre-feet in 2030. The MWDOC 2005 UWMP indicates the MWDOC service area will have sufficient existing and planned supplies to meet 100 percent of the projected demand through 2030, under a normal hydrologic year, single dry hydrologic year, and a series of multiple dry years. By 2030, MWDOC is projected to meet its indirect consumption with 69 percent of surface supplies from the Santa Ana River and local streams, 18 percent recycled water, and 13 percent imported water. The MWDOC 2005 UWMP also finds that the region is continuing to improve its water reliability by designing programs to protect and ensure water quality, maximize local supplies, promote conservation, encourage recycled water use, and meet its demands during shortages. The MWDOC's Water Shortage Contingency Plan addresses how the agency will meet water demands during water shortages. During water shortages, MWDOC works with its member agencies to manage the water supply in the region to ensure it meets the demands of its member agencies. Water shortages may result from variations in weather, natural disasters, or unanticipated situations (i.e., system failures, acts of terror). During a severe water shortage, MWDOC would be responsible for allocating imported water from MWD. MWDOC would use the same principles as identified in MWD's Water Surplus and Drought Management Plan for the allocation of imported water to its member (retail) water agencies, subject to any locally developed principles which would be developed in consultation with the retail agencies. In a water shortage event, MWDOC will adopt a Water Shortage Management Resolution or Ordinance.

The City's *Water Master Plan* includes a Water Supply Plan, which is set to implement and maintain delivery of water to the City's customers despite the status of supply availabilities. Several water supply scenarios were analyzed to determine if the City would be able to meet water demands under various water supply situations. Five scenarios were evaluated, which includes zero percent groundwater and 100 percent MWD Supply, 25 percent groundwater and 75 percent MWD Supply, 50 percent groundwater and 50 percent MWD Supply, 75 percent groundwater and 25 percent MWD Supply, and 100 percent groundwater and 0 percent MWD Supply. In all scenarios, except with 100 percent groundwater, the City would be able to meet the required demands and design criteria. In the event the entire MWD water supply was unavailable, there would be a shortage of available supply to meet the future (year 2030) projected ADD. The City cannot meet its MDD solely from groundwater sources, unless the City's Phase 4 Conservation Plan, which calls for conservation of 30 to 50 percent, is implemented. If necessary, the City would implement Section 13.28.060 to 13.28.100 of the Municipal Code, which allows the City to implement the four-phased water conservation program, reducing potential impacts to water supply to less than significant.

Individual development projects would be reviewed on a local and regional level to assess potential impacts to the water supply system. Projects would only be approved if adequate water supplies exist at the time of their implementation. Therefore, cumulative impacts to water supply would be less than significant in this regard.

General Plan Update Policies and Implementation Measures: Refer to the Policies and Implementation Measures identified above.

Mitigation Measures: No further mitigation is required beyond compliance with the General Plan Update Policies and Implementation Measures.

Level of Significance: Less Than Significant Impact.

5.11.6 SIGNIFICANT UNAVOIDABLE IMPACTS

All impacts related to water supplies and facilities associated with implementation of the proposed General Plan Update for the City of Buena Park would be less than significant by adherence to and/or compliance with policies and implementation measures in the proposed General Plan Update. No significant unavoidable water supplies and facilities impacts would occur as a result of buildout of the proposed General Plan Update.